hubs coupling with a second shaft and together define an adjacent cylindrical form to the internal and end hubs of the first cross-blower section and extending to and along a same cylindrical axis of the second cross-flow blower as the first cross-flow blower;

a flange coupling to the first and second shafts of the first and second blowers, respectively, and to the housing;

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said flange also comprising two edges, a leading edge and a trailing edge, wherein the leading edge couples to the housing at a leading edge point, and wherein the trailing edge couples to the housing at a trailing edge point, and wherein the leading edge point, the trailing edge point and the cylindrical axis define an acute angle within the full angular extent of said cylindrical form.

2. A gas discharge laser as in Claim 1, said flange not coupling to said lower electrode support.

3. The gas discharge laser of any of claims 1 or 2, wherein a cross-section of the flange has an aerodynamic shape with respect to a direction of the flow of laser gas.

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24. A gas discharge laser, comprising:

a housing;

an upper electrode;

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a lower electrode;

a lower electrode support; and

a cross-flow blower, comprising a first shaft and a second shaft, wherein each of the shafts comprise an end portion, wherein each end portion includes a center cross-sectional area, a first end cross-sectional area and a second end cross-sectional area, wherein the center cross-sectional area has a diameter greater than the diameter of the first end cross-sectional area, and wherein the center cross-sectional area has a diameter greater than the second end cross-sectional area.

25. The cross-flow blower of Claim 24, wherein each shaft end portion has a constant radius of curvature.

A2

26. The cross-flow blower of Claim 24, wherein each shaft end portion has a varying radius of curvature.

31. A gas discharge laser, comprising:

a laser tube filled with a gas mixture;

a plurality of electrodes, including a pair of main discharge electrodes, within the discharge chamber for energizing the gas mixture;

a optical resonator for generating a laser beam; and

a cross-flow blower assembly including a pair of longitudinally adjacent and coaxially disposed cylindrical cross-flow blowers, and

A3

a flange supportingly disposed between said pair of cross-flow blowers, wherein said flange angularly overlaps a cylindrical cross-sectional perimeter of said blowers by less than 50%.

32. A gas discharge laser, comprising:

a laser tube filled with a gas mixture;

a plurality of electrodes within the discharge chamber for energizing the gas mixture, said plurality of electrodes including a pair of main discharge electrodes spaced apart by a discharge volume;

an optical resonator for generating a laser beam; and

a cross-flow blower assembly including a pair of longitudinally adjacent and coaxially disposed cylindrical cross-flow blowers, and

a flange supportingly disposed between said pair of cross-flow blowers, wherein said flange angularly does not overlap a downstream arc of a cylindrical cross-sectional perimeter of said blowers.

33. The laser of Claim 32, wherein said downstream arc is defined between said flange and said discharge volume within a cross-section of said laser permitting substantial interflow between portions of the gas mixture circulated by each of said pair of blowers before said portions reach the discharge volume.

34. A gas discharge laser as in Claim 32, further comprising an electrode support bar for supporting one of the pair of main discharge electrodes wherein said flange is coupled to said support housing and supportingly at said blowers, and said flange is not coupled directly to said electrode support bar.

35. The laser of Claim 34, wherein said flange is coupled to said support housing only at said support housing and supportingly at said blowers.

36. A gas discharge laser as in Claim 32, further comprising an electrode support bar for supporting one of the pair of main discharge electrodes, wherein said flange is coupled to the electrode support bar.

37. The laser of Claim 36, wherein said flange further couples said blowers to said support housing.

38. A gas discharge laser, comprising:

a laser tube defined by a support housing filled with a gas mixture;

a plurality of electrodes defining a discharge volume within the laser tube, the electrodes for energizing the gas mixture, said plurality of electrodes including first and second main discharge electrodes spaced apart by the discharge volume;

a optical resonator for generating a laser beam; and

a cross-flow blower assembly for circulating the gas mixture through said discharge volume, said cross-flow blower assembly including a shaft, said shaft including a coupling segment with a longitudinally non-uniform thickness, such that when said